● DATA SHEET · H_2 TUBE STORAGE UP TO 200 BAR

BLOXX | SYSTEM

WOLF
H_2 ANYWHERE



Visualisation of the 40 ft HC reference design. Side wall, roof and doors are not shown.

251 kg
usable in the 40 ft HC reference design between 200 and 30 bar at 15 °C

3 codes
AD 2000, EN 13445 or ASME Section VIII Division 2, as you choose

Shop-built
assembled and tested at the works; upper stack sections and vent line on site

Buffer time and stock per unit

Hours per unit of the reference design. Usable mass between 200 bar and 30 bar residual pressure, filled at 15 °C.

Load case	20 ft (111 kg)	40 ft HC (251 kg)	45 ft HC (285 kg)
Surplus 1 MW (18.2 kg/h)	6.1	13.8	15.7
Surplus 2 MW (36.4 kg/h)	3.1	6.9	7.8
Surplus 5 MW (91 kg/h)	1.2	2.8	3.1
Surplus 10 MW (182 kg/h)	0.6	1.4	1.6
Consumption 200 kg per day (about 93 Nm^3/h)	13.4	30.1	34.2
Consumption 500 kg per day (about 232 Nm^3/h)	5.3	12.1	13.7

Surplus is the difference between production and consumption; 1 MW corresponds to 18.2 kg/h (55 kWh per kg of hydrogen). The usable mass depends on the minimum pressure of your consumer; the table assumes 30 bar. WOLF calculates the usable mass for your minimum pressure and determines the number of units from your load and pressure profile.

WOLF Product Family for your H_2 storage needs

Type	Pressure range	Construction
Vessels and storage tanks	Design pressure 50 to 400 bar	standard vessels up to 190 m^3; for refuelling stations high-pressure vessels for 330 and 400 bar
Tube bundle storage	Design pressure up to 500 bar	seamless individual tubes on common manifolds, extendable by further tubes
BLOXX SYSTEM (ISO frame)	**Filling pressure at 15 °C: up to 550 bar**	**unit with ISO container frame dimensions, its own instrumentation wall, safety valves and gas detection, assembled and tested at the works; heavy high-pressure units also available on request**

The high-pressure version up to 550 bar has its own data sheet.

Your enquiry

For a quotation, send the following to sales.hydrogen@rjwolf.de: application, production and consumption, pressure upstream of the compressor, minimum pressure at the consumer, fillings per day, installation site with lowest ambient temperature, design code, date and expansion stages. WOLF sizes the tubes from these data; an independent third party verifies all calculations. You also receive the project data sheet for your unit size with the maximum quantity per expansion stage.

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PR-H2TS-2026-10-S-DB-EN

Enquiry by email

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Reference unit sizes at 200 bar and 15 °C

All values apply to the reference design. For your project, WOLF sizes the diameter, wall, length and number of the tubes; all calculations are based on your data for pressure, load cycles, fill quantity, temperature and installation site and are verified by an independent third party. With your quotation you receive the maximum allowable pressure, the design temperature and the temperature-dependent fill limit, optimised for your project. WOLF supplies all units assembled at the works, tested and certified by an independent notified body; on site, the upper stack sections and the operational vent line are fitted.

Parameter	20 ft	40 ft HC	45 ft HC
Mannesmann H2ready HFI storage tubes [number]	25	25	25
Water capacity [m^3]	8.9	20.2	22.9
Usable between 200 and 30 bar [kg]	**111**	**251**	**285**
Stored mass at 200 bar and 15 °C [kg]	133	301	342
Normal volume of the stored mass [Nm^3]	1,485	3,350	3,805
Total mass [t]	about 35	71.6	about 81
Frame length × width (ISO external dimensions) [m]	6.06 × 2.44	12.19 × 2.44	13.72 × 2.44
Footprint [m^2]	14.8	29.7	33.4
Area with 5 m margin[1] [m^2]	200	276	295
Frame height (ISO external dimension) [m]	2.59	2.90	2.90
Height above frame base with stacks [m]	about 4.3	about 4.6	about 4.6
Mean bearing pressure[2] [t/m^2]	about 2.4	about 2.4	about 2.4

Real gas values, normal volume to DIN 1343. The lifting weight is given in the project data sheet for your unit size, the lifting points in the dimension drawing. The total mass and height with stacks of the 20 ft unit are guide values.

[1] Calculation example; the safety distance is set by the risk assessment for the site.

[2] WOLF states the support loads per saddle support for the foundation design with the dimension drawing after the order.

Scope of supply and interfaces

Interface	WOLF supplies	Operator provides
Process connection	Tie-in panel with separate filling and withdrawal connections, non-return valve in the filling path and tie-in valve that closes when de-energised; nominal size and pressure rating (A)	Connection of your piping at the tie-in panel, pressure control to the consumer; safe isolation of the unit from the field manifold (double block and bleed or spectacle blind)
Filling and withdrawal rate	Values for your load profile (A)	Load profile, compressor
Gas quality and cleanliness	Information on the delivery condition of the tubes, limit values, purging procedure (A)	Monitoring of oxygen and moisture upstream of the storage, with feed interlock
Pressure limitation, venting, purging	Safety valves, vent lines with condensate drain, upper stack sections, purge connection	Filling control of the compressor to the fill limit stated by WOLF, pressure limitation below the set pressure of the safety valves; nitrogen for purging
Signals and emergency shutdown	Intrinsically safe measuring circuits, gas detection control unit, contact for the emergency shutdown	Connection to a permanently staffed location and to the control system; shutdown of the feed on a gas alarm at the unit
Auxiliary power and earthing	Terminal box, earthing boss; connected load (A)	Power supply, if required backed by UPS or standby power; equipotential bonding, lightning protection
Transport and installation	Transport and installation of the unit up to the tie-in point; dimension drawing with support loads and lifting points	Foundation, access and delivery route, crane hardstanding, impact protection
Commissioning and examinations	Support for purging and first filling; draft examination scheme; unit prepared for examination on site, for example by acoustic emission testing	Examination before commissioning and periodic examinations by the inspection body; examination intervals
Documents and applications	EU declaration of conformity, operating manual in the language of the country of installation, planning and permitting data	Risk assessment, explosion protection document, permit applications

(A) project-specific value; you receive it with your quotation.

The illustration is a visualisation of the reference design. Materials, quantities, times and masses are given for the reference design to AD 2000. Permitting and installation details use German examples; local regulations apply. The offer and order confirmation are binding. Subject to technical changes. Mannesmann H2ready is a trade mark of Mannesmann Line Pipe GmbH.